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(12) **United States Patent**
Crary(10) **Patent No.: US 6,457,261 B1**
(45) **Date of Patent: Oct. 1, 2002**(54) **SHOCK ABSORBING MIDSOLE FOR AN ATHLETIC SHOE**(75) Inventor: **Nathan Crary**, Los Alamitos, CA (US)(73) Assignee: **LL International Shoe Company, Inc.**,
Los Angeles, CA (US)(*) Notice: Subject to any disclaimer, the term of this
patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.(21) Appl. No.: **09/766,786**(22) Filed: **Jan. 22, 2001**(51) **Int. Cl.⁷** **A43B 13/28**; A43B 13/18;
A43B 23/00(52) **U.S. Cl.** **36/27**; 36/28; 36/114;
36/137; 36/37(58) **Field of Search** 36/27, 28, 92,
36/114, 88, 144, 137, 37, 69, 76 R(56) **References Cited****U.S. PATENT DOCUMENTS**413,693 A 10/1889 Walker
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1998.*Primary Examiner*—M. D. Patterson(74) *Attorney, Agent, or Firm*—Greer, Burns & Crain, Ltd.(57) **ABSTRACT**

A midsole comprises a heel cup having a semi-rigid upper plate, a lower plate composed of a material that is softer than the upper plate, and at least one telescopic shock absorber between the upper and lower plates. The telescopic shock absorbers have one portion that collapses into a second portion when the shock absorber is loaded or compressed. On release of the load, the shock absorbers of the invention return only a controlled portion of the compressive load originally applied. A second embodiment has a translucent heel cup and shock absorbers and a lamp for illuminating the heel cup and shock absorbers.

28 Claims, 5 Drawing Sheets